**Amendments to the claims:**

This listing of claims replaces all prior versions and listing of claims in the application.

CLAIMS:

What is claimed is:

1. (original) An air handling method comprising the steps of:
   - accepting air into a centrifugal fan having a centrifugal fan impeller element;
   - rotationally impelling said air through use of said centrifugal fan impeller element;
   - imparting a centrifugal force to said air;
   - discharging said impelled air into a diffuser element;
   - transforming tangential velocity pressure of said discharged, impelled air to static pressure without using vanes and by decreasing tangential velocity of said discharged, impelled air;
   - increasing static pressure of said discharged, impelled air as a result of said step of decreasing tangential velocity of said discharged, impelled air;
   - outputting said discharged, impelled air to a downflow air handling environment; and
   - sufficiently controlling radial velocity of said discharged, impelled air as it travels through said diffuser element so as to avoid a problem related to recirculation back into said diffuser element of said discharged, impelled air output to said downflow air handling environment,

   wherein said step of transforming tangential velocity pressure comprises the step of radially extending an interface through which said discharged, impelled air is output to said downflow air handling environment, and

wherein said step of sufficiently controlling radial velocity of discharged, impelled air comprises the step of axially converging said discharged, impelled air.

2. (original) An air handling method as described in claim 1 wherein said step of axially converging said discharged, impelled air comprises the step of smoothly axially converging said discharged, impelled air.

3. (original) An air handling method as described in claim 1 wherein said diffuser element has a diffuser outlet having a diffuser outlet area and a diffuser inlet having a diffuser inlet area, and said diffuser outlet area and said diffuser inlet area are approximately equal.

4. (original) An air handling method as described in claim 1 wherein said step of transforming tangential velocity pressure to static pressure has an efficiency selected from the group of efficiencies consisting of: at least 70%, at least 80%, and at least 85%.

5. (original) An air handling method as described in claim 1 wherein said step of transforming tangential velocity pressure to static pressure comprises the step of transforming tangential velocity pressure to effect at least 90% of the total increase in static pressure observed as said discharged, impelled air travels through said diffuser element.

6. (original) An air handling method as described in claim 1 wherein said step of outputting said discharged, impelled air to a downflow air handling environment comprises the step of outputting said discharged, impelled air to a downflow air handling environment with a zero net velocity.

7. (original) An air handling method as described in claim 1 wherein said step of outputting said discharged, impelled air to a downflow air handling environment comprises the step of outputting said discharged, impelled air to a scroll.

8. (original) An air handling method as described in claim 7 further comprising the step of jetting air that is output from said scroll.

9. (original) An air handling method as described in claim 1 wherein the step of outputting said discharged, impelled air to a downflow air handling environment comprises the step of output said discharged, impelled air to a plenum.

10. (original) An air handling method as described in claim 1 wherein the step of outputting said discharged, impelled air to a downflow air handling environment comprises the step of outputting said discharged, impelled air to a flow turning element that itself outputs to a plenum.

11. (original) An air handling method as described in claim 1 further comprising the step of establishing acoustical material outside of and substantially contiguously with said diffuser element.

12. (original) An air handling method as described in claim 1 wherein said step of increasing static pressure comprises the step of increasing said static pressure less than 30 inches water.

13. (original) An air handling method as described in claim 1 wherein said step of sufficiently controlling radial velocity comprises the step of controlling radial velocity at a diffuser outlet.

14. (original) An air handling method as described in claim 1 wherein said step of sufficiently controlling radial velocity comprises the step of increasing radial velocity only by that amount necessary to avoid said recirculation related problem and by axially converging said discharged, impelled air.

15. (original) An air handling method as described in claim 1 wherein said step of sufficiently controlling radial velocity comprises the step of causing radial velocity to remain substantially the same.

16. (original) An air handling method as described in claim 1 wherein said step of sufficiently controlling radial velocity comprises the step of keeping radial velocity above a critical limit at which said recirculation related problem starts.

17. (original) An air handling method as described in claim 11 further comprising the step of perforating said diffuser element.

18. (original) An air handling method as described in claim 1 wherein said centrifugal fan does not impel air in an axial direction.

19. (original) An air handling method as described in claim 1 wherein said diffuser element is made at least in part from acoustical material.

20. (original) An air handling method as described in claim 1 further comprising the step of axially moving at least one of two oppositely established forms of said diffuser element toward the other of said forms to at least partially obstruct flow of said discharged, impelled air.

21. (original) An air handling method as described in claim 1 wherein said step of imparting a centrifugal force is accomplished through use of forwardly curved impeller blades.

Claims 22-41 (cancelled)

42. (original) A fluid handling method comprising the steps of:

- accepting fluid into a centrifugal fan having a centrifugal fan axis of rotation and a centrifugal fan impeller element;

- rotationally impelling said fluid through use of a centrifugal fan impeller element;
- imparting a centrifugal force to said fluid;
- discharging said impelled fluid into a diffuser element;
- axially converging said discharged, impelled fluid as a radial distance from said centrifugal axis of rotation increases;
- transforming tangential velocity pressure of said discharged, impelled fluid to static pressure;
- increasing static pressure of said discharged, impelled fluid; and
- outputting said discharged, impelled fluid to a downflow fluid handling environment.

43. (original) A fluid handling method as described in claim 42 wherein said step of transforming tangential velocity pressure of said discharged, impelled fluid to static pressure comprises the step of radially extending an interface through which said discharged, impelled fluid is output to a downflow fluid handling environment.

44. (original) A fluid handling method as described in claim 42 wherein an outlet area of said diffuser element and an inlet area of said diffuser element are approximately equal in size.

45. (original) A fluid handling method as described in claim 42 wherein said step of outputting said discharged, impelled fluid to a downflow fluid handling environment comprises the step of outputting said discharged, impelled fluid to a scroll.

46. (original) A fluid handling method as described in claim 45 further comprising the step of jetting fluid that is output from said scroll.

47. (original) A fluid handling method as described in claim 42 wherein said step of outputting said discharged, impelled fluid to a downflow fluid handling environment comprises the step of outputting said discharged, impelled fluid to a plenum.

48. (original) A fluid handling method as described in claim 42 wherein said step of axially converging comprises the step of smoothly axially converging.

49. (original) A fluid handling method as described in claim 47 wherein said step of outputting said discharged, impelled fluid to a downflow fluid handling environment comprises the step of outputting said discharged, impelled fluid to a flow turning element that outputs to a plenum.

50. (original) A fluid handling method as described in claim 42 wherein said step of transforming tangential velocity pressure to static pressure has an efficiency selected from the group of efficiencies consisting of: greater than 70%, greater than 80%, and greater than 85%.

51. (original) A fluid handling method as described in claim 42 wherein said step of transforming tangential velocity pressure to static pressure comprises the step of transforming tangential velocity pressure to effect at least 90% of the total increase in static pressure observed as said discharged, impelled air travels through said diffuser element.

52. (original) A fluid handling method as described in claim 42 wherein said step of transforming tangential velocity pressure to static pressure comprises the step of decreasing tangential velocity.

53. (original) A fluid handling method as described in claim 42 further comprising the step of establishing acoustical material outside of and substantially contiguously with said diffuser element.

54. (original) A fluid handling method as described in claim 42 wherein said step of accepting fluid into a centrifugal fan comprises the step of accepting air into a centrifugal fan.

55. (original) A fluid handling method as described in claim 42 wherein rotationally impelling said fluid through use of a centrifugal fan impeller element comprises the step of rotationally impelling said fluid without substantially compressing said fluid.

56. (original) A fluid handling method as described in claim 55 wherein said step of rotationally impelling said fluid without substantially compressing said fluid comprises the step of increasing the static pressure of said fluid by an amount less than 30 inches water.

57. (original) A fluid handling method as described in claim 42 wherein said step of transforming tangential velocity pressure to static pressure comprises the step of optimally transforming tangential velocity pressure.

58. (original) A fluid handling method as described in claim 57 wherein said step of optimally transforming tangential velocity pressure comprises the step of decreasing tangential velocity, and the step of increasing radial velocity in the vicinity of an outlet of said diffuser element only by that amount necessary to just avoid recirculation related problems, wherein said step of increasing radial velocity in the vicinity of an outlet of said diffuser element is accomplished by performing said step of axially converging.

59. (original) A fluid handling method as described in claim 57 wherein said step of optimally transforming tangential velocity pressure comprises the step of decreasing tangential velocity and, by performing said step of axially converging said discharged, impelled fluid, causing said discharged, impelled fluid to exit said diffuser element with a radial velocity that is just greater than that radial velocity at which recirculation related problems start.

60. (original) A fluid handling method as described in claim 42 wherein said step of axially converging said discharged, impelled fluid comprises the step of increasing radial velocity in the vicinity of an outlet of said diffuser element.

61. (original) A fluid handling method as described in claim 60 wherein said step of increasing radial velocity comprises the step of increasing radial velocity only substantially by that amount just necessary to avoid recirculation related problems.

62. (original) A fluid handling method as described in claim 42 wherein said step of axially converging said discharged, impelled fluid comprises the step of keeping radial velocity at exit from said diffuser element above a critical limit at which recirculation related problems start.

63. (original) A fluid handling method as described in claim 42 wherein said step of axially converging said discharged, impelled fluid comprises the step of causing radial velocity to remain substantially the same throughout said diffuser element.

64. (original) A fluid handling method as described in claim 42 wherein said step of transforming velocity pressure of said impelled fluid to static pressure is performed without vanes.

65. (original) A fluid handling method as described in claim 42 wherein said step of axially converging said discharged, impelled fluid comprises the step of continuously axially converge said discharged, impelled fluid along substantially the entire radial length of said diffuser element.

66. (original) A fluid handling method as described in claim 42 wherein said step of outputting said impelled fluid to a downflow fluid handling environment comprises the

step of outputting said impelled fluid to a downflow fluid handling environment with a net zero velocity.

67. (original) A fluid handling method as described in claim 53 further comprising the step of perforating said diffuser element.

68. (original) A fluid handling method as described in claim 42 wherein said diffuser element is made at least in part from acoustical material.

69. (original) A fluid handling method as described in claim 42 further comprising the step of axially moving at least one of two oppositely established forms of said diffuser element toward the other of said forms to at least partially obstruct flow of said discharged, impelled air.

70. (original) A fluid handling method as described in claim 42 wherein said step of imparting a centrifugal force to said fluid is accomplished through the use of forwardly curved impeller blades.

Claims 71-97 (cancelled)

98. (original) An impelled fluid output diffusion method comprising the steps of:

- receiving through a diffuser inlet of a diffuser element a fluid impelled by a centrifugal fan and having a tangential velocity and a radial velocity;
- decreasing said tangential velocity of said impelled fluid;
- increasing static pressure of said impelled fluid as a result of said step of decreasing said tangential velocity;
- controlling radial velocity of said impelled fluid; and
- outputting said impelled fluid through a diffuser outlet of said diffuser element and to a downflow fluid handling environment;

wherein said step of controlling radial velocity of said fluid impelled by a centrifugal fan comprises the step of controlling radial velocity of said impelled fluid so as to avoid problems related to recirculation of said impelled fluid output to said downflow fluid handling environment back into a space defined by said diffuser element.

99. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said impelled fluid comprises the step of actively keeping said radial velocity above a critical limit at which said recirculation problems begin.

100. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said fluid impelled by said centrifugal fan so as to avoid recirculation related problems of said impelled fluid output to said downflow fluid handling environment comprises the step of controlling radial velocity of said fluid impelled by said centrifugal fan so as to just avoid recirculation related problems of said impelled fluid output to said downflow fluid handling environment.

101. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of decreasing said tangential velocity comprises the step of radially extending an interface through which impelled fluid is output to said downflow fluid handling environment.

102. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of outputting said impelled fluid through a diffuser outlet of said diffuser element and to a downflow fluid handling environment comprises the step of outputting said impelled fluid to a scroll.

103. (original) An impelled fluid output diffusion method as described in claim 102 further comprising the step of jetting fluid output from said scroll.

104. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of outputting said impelled fluid through a diffuser outlet of said diffuser element and to a downflow fluid handling environment comprises the step of outputting said impelled fluid to a plenum.

105. (original) An impelled fluid output diffusion method as described in claim 104 wherein said step of outputting said impelled fluid through a diffuser outlet of said diffuser element and to a downflow fluid handling environment comprises the step of outputting said impelled fluid to a flow turning element that outputs fluid to said plenum.

106. (original) An impelled fluid output diffusion method as described in claim 98 further comprising the step of establishing acoustical material to reduce noise.

107. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of establishing acoustical material to reduce noise comprises the step of establishing acoustical material outside of and substantially contiguously with said diffuser element.

108. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of receiving through a diffuser inlet of a diffuser element a fluid impelled by a centrifugal fan comprises the step of receiving air.

109. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of receiving through a diffuser inlet of a diffuser element a fluid impelled by a centrifugal fan comprises the step of receiving a fluid substantially uncompressed by said centrifugal fan.

110. (original) An impelled fluid output diffusion method as described in claim 109 wherein said step of receiving a fluid substantially uncompressed by said centrifugal fan

comprises the step of receiving fluid whose static pressure is increase less than 30 inches of water.

111. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said impelled fluid comprises the step of controlling radial velocity of said impelled fluid at said outlet of said diffuser element.

112. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said impelled fluid comprises the step of increasing radial velocity of said impelled fluid in the vicinity of said diffuser outlet.

113. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said impelled fluid comprises the step of causing radial velocity of said impelled fluid to remain substantially unchanged.

114. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said impelled fluid comprises the step of causing radial velocity of said impelled fluid at said diffuser outlet to be above a critical limit at which recirculation related problems start.

115. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of decreasing said tangential velocity of said fluid impelled by a centrifugal fan and said step of controlling radial velocity of said fluid impelled by a centrifugal fan are each performed without vanes.

116. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of controlling radial velocity of said impelled fluid is accomplished by axially converging said impelled fluid.

117. (original) An impelled fluid output diffusion method as described in claim 116 wherein said step of controlling radial velocity of said impelled fluid is accomplished by smoothly axially converging said impelled fluid.

118. (original) An impelled fluid output diffusion method as described in claim 116 wherein an area of said diffuser inlet and an area of said diffuser outlet are substantially equal in size.

119. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of outputting said fluid impelled by a centrifugal fan through a diffuser outlet and to a downflow fluid handling environment comprises the step of outputting said fluid impelled by a centrifugal fan through a diffuser outlet with a net zero velocity.

120. (original) An impelled fluid output diffusion method as described in claim 98 wherein an area of said diffuser inlet and an area of said diffuser outlet are substantially equal in size.

121. (original) An impelled fluid output diffusion method as described in claim 106 further comprising the step of perforating said diffuser element.

122. (original) An impelled fluid output diffusion method as described in claim 98 wherein said centrifugal fan does not impel air in an axial direction.

123. (original) An impelled fluid output diffusion method as described in claim 106 wherein said step of establishing acoustical material to reduce noise comprises the step of establishing acoustical material as at least part of said diffuser element.

124. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of decreasing said tangential velocity of said impelled fluid and increasing static pressure of said impelled fluid are related by a transformation efficiency selected from the group of efficiencies consisting of: at least 70%, at least 80%, and at least 85%.

125. (original) An impelled fluid output diffusion method as described in claim 98 wherein said step of increasing static pressure of said impelled fluid comprises the step of effecting an increase of at least 90% of the total increase in static pressure observed as said impelled fluid travels through said diffuser element.

126. (original) An impelled fluid output diffusion method as described in claim 98 further comprising the step of axially moving at least one of two oppositely established forms of said diffuser element toward the other of said forms to at least partially obstruct flow of said impelled air.

127. (original) An impelled fluid output diffusion method as described in claim 98 wherein said centrifugal fan has forwardly curved impeller blades.

Claims 128-153 (cancelled)

154. (original) An air handling method comprising the steps of:

- accepting air into a centrifugal fan having a centrifugal fan impeller element;
- rotationally impelling said air through use of said centrifugal fan impeller element;
- imparting a centrifugal force to said air;
- discharging said impelled air into a diffuser element;
- transforming tangential velocity pressure of said discharged, impelled air to static pressure without using vanes and by decreasing tangential velocity;
- increasing static pressure of said discharged, impelled air;
- sufficiently controlling radial velocity of said impelled air so as to avoid problems related to recirculation of said discharged, impelled air output to said downflow air handling environment;
- outputting said discharged, impelled air to a plenum; and

- establishing acoustical material substantially outside of and contiguously with said diffuser element,

wherein said step of transforming tangential velocity pressure of said discharged, impelled air comprises the step of radially extending an interface through which said discharged, impelled air is output to said plenum, and

wherein said step of sufficiently controlling radial velocity of discharged, impelled air comprises the step of axially converging said discharged, impelled air, and

wherein said recirculation is recirculation of said discharged impelled air output to a plenum back into as space defined by said diffuser element

155. (original) An air handling method as described in claim 154 wherein said output impelled air has a net zero velocity.

156. (original) An air handling method as described in claim 154 wherein said step of axially converging said discharged, impelled air comprises the step of smoothly axially converging said discharged, impelled air.

157. (original) An air handling method as described in claim 154 wherein said step of increasing static pressure of said discharged, impelled air comprises the step of increasing by at least 90% of the total increase in static pressure observed as said discharged, impelled air passes through said diffuser element.

158. (original) An air handling method further comprising the centrifugal fan of claim 154.

159. (original) An air handling method as described in claim 154 wherein said centrifugal fan does not impel air in an axial direction.

160. (original) An air handling method as described in claim 154 wherein said diffuser element is non-rotatable.

161. (original) An air handling method as described in claim 154 further comprising the step of axially moving at least one of two oppositely established forms of said diffuser element toward the other of said forms to at least partially obstruct flow of said discharged, impelled air.

162. (original) An air handling method as described in claim 154 wherein said step of transforming tangential velocity pressure to static pressure has an efficiency selected from the group of efficiencies consisting of: at least 70%, at least 80%, and at least 85%.

163. (original) An air handling method as described in claim 154 wherein said step of transforming tangential velocity pressure of said discharged, impelled air to static pressure effects an increase of at least 90% of the total increase in static pressure observed as said impelled fluid travels through said diffuser element.

164. (original) An air handling method as described in claim 154 wherein an area of an outlet of said diffuser element is substantially equal to an area of an inlet of said diffuser element.

165. (original) An air handling method as described in claim 154 wherein said step of imparting a centrifugal force is accomplished though use of forwardly curved impeller blades.

Claims 166-175 (Cancelled)

176. (original) A fluid handling method comprising the steps of:

- accepting fluid into a centrifugal fan having a centrifugal fan axis of rotation and a centrifugal fan impeller element;

- rotationally impelling said fluid through use of a centrifugal fan impeller element;
- imparting a centrifugal force to said fluid;
- discharging said impelled fluid into a diffuser element;
- transforming tangential velocity pressure of said discharged, impelled fluid to static pressure with a regain efficiency of at least 70 %;
- increasing static pressure of said discharged, impelled fluid as a result of said step of transforming tangential velocity pressure of said discharged, impelled fluid to static pressure; and
- outputting said discharged, impelled fluid to a downflow fluid handling environment,

wherein said step of transforming tangential velocity pressure to static pressure comprises the step of transforming tangential velocity pressure to effect at least 90% of the total increase in static pressure observed as said discharged, impelled air travels through said diffuser element.

177. (original) A fluid handling method as described in claim 176 further comprising the step of axially converging said discharged, impelled fluid as a radial distance from said centrifugal axis of rotation increases.

178. (original) A fluid handling method as described in claim 176 wherein said step of imparting a centrifugal force to said fluid is accomplished through use of forwardly curved impeller blades.

Claims 179-181 (Cancelled)